

In the Claims:

Claim 1 (currently amended): Device for use in sports and games for detecting the position of impact of a moveable object, such as a ball, in particular tennis ball, baseball or the like, comprising a sheet or mat (1,10) with an outer (2) and an inner (8) layer, the sheet or mat (1,10) forming a target surface and having embedded therein a plurality of electrically conductive elements (12A,13A;12B,13B) forming pressure sensitive switches distributed over the target surface and communicating with electronic circuits (33) for outputting, processing and displaying (35) electrical signals from pressure sensitive switches (12A,13A;12B,13B) when activated by said impact or pressure,

characterized in that:

- the underneath side of the outer layer (8) of the sheet or mat (1,10) is provided with a first pattern of electrically conductive elements (13A;12B) at least at the positions of the pressure sensitive switches,
- the upper side of the inner layer (8) of said sheet or mat (1,10) is provided with a second pattern of electrically conductive elements (12A;13B) at least at the positions of the pressure sensitive switches,
- the first pattern of electrically conductive elements (13A;12B) and the second pattern of electrically conductive elements (12A;13B) are arranged so as to enable temporary contact to be established at the positions of the pressure sensitive switches,
- an insulation (5) layer between said outer and inner layers (2,8) is provided with cavities or holes (50) at the positions of the pressure sensitive switches (12A,13A;12B,13B) for establishing temporary contact therein, and from each cavity or hole (50) at least one opening (51) directed sideways for air movement during said impact or pressure activation, and
- at least one of the first and second patterns of electrically conductive elements (12A,13A;12B,13B), is subdivided into a number of individual zones (A,B,C,D..., X,Y,Z...), where each zone comprises a plurality of said pressure sensitive switches (12A,13A;12B,13B), and the electronic circuits (33) have separate connections (30A,30B) to each of said individual zones.

Claim 2 (currently amended): Device according to claim 1, wherein the character and/or the thickness of the insulation layer (5) determine(s) the detection sensitivity.

Claim 3 (currently amended): Device according to claim 1 ~~or 2~~, wherein the second pattern of electrically conductive elements (~~12A;13B~~) is applied on an upward surface of an inner support layer (~~3~~) joined with the inner layer (~~8~~).

Claim 4 (currently amended): . Device according to claim 1 ~~any one of claims 1-3~~, intended for use with a moveable object, in particular in the form of a ball, having a given size, wherein said positions of the pressure sensitive switches (~~12A,13A;12B,13B~~) are mutually spaced in such a way that the ball or the object by impact or pressure will activate at least two pressure sensitive switches (~~12A;12B~~).

Claim 5 (currently amended): Device according to claim 1 ~~any one of claims 1-4~~, wherein said first and/or said second pattern of electrically conductive elements (~~12A,13A;12B,13B;13A',13A'';13B',13B''~~) are/is formed by printed circuit elements.

Claim 6 (currently amended): Device according to ~~any one of claims 1-5~~ claim 1, wherein the outer layer (~~2~~) of the sheet or mat (~~1,10~~) is further provided with a hollow and flexible, dome-shaped protrusion (~~2A~~) at each position of the pressure sensitive switches (~~12B,13B~~), each zone comprising a number of protrusions (~~2A~~).

Claim 7 (currently amended) Device according to claim 6, wherein said hollow and flexible protrusions (~~2A~~) inherently provides for a sufficient degree of elastic deformation when activated by said impact or pressure, which also affects the degree of detection accuracy.

Claim 8 (currently amended): Device according to claim 6 ~~or 7~~, wherein said hollow and flexible protrusions (~~22A~~) are further provided with spring elements (~~25~~), preferably of metal, for obtaining a sufficient degree of elastic deformation when activated by said impact or pressure.

Claim 9 (currently amended): Device according to ~~any one of claims 6-8~~ claim 6, wherein the shape of said protrusions (~~2A,10A,10B,10C...~~) is substantially circular as seen in plan view.

Claim 10 (currently amended): Device according to ~~any one of claims 1-9~~ claim 1, wherein the surface of the sheet or mat (~~1,10~~) is provided with at least one line (~~11X~~) corresponding to a line (~~11~~) that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones (~~10p~~) border said at least one line (~~11x~~).

Claim 11 (currently amended): Device according to claim 10, wherein said at least one line (~~11X~~), located or provided on said surface, contains line zones (~~20p~~) having pressure sensitive switches, preferably with said line zones arranged in the longitudinal direction of said at least one line (~~11x~~).

Claim 12 (new): Device according to claim 2, wherein the second pattern of electrically conductive elements is applied on an upward surface of an inner support layer joined with the inner layer

Claim 13 (new): Device according to claim 2, intended for use with a moveable object, in particular in the form of a ball, having a given size, wherein said positions of the pressure sensitive switches are mutually spaced in such a way that the ball or the object by impact or pressure will activate at least two pressure sensitive switches.

Claim 14 (new): Device according to claim 3, intended for use with a moveable object, in particular in the form of a ball, having a given size, wherein said positions of the pressure sensitive switches are mutually spaced in such a way that the ball or the object by impact or pressure will activate at least two pressure sensitive switches.

Claim 15 (new): Device according to claim 2, wherein said first and/or said second pattern of electrically conductive elements are/is formed by printed circuit elements.

Claim 16 (new): Device according to claim 3, wherein said first and/or said second pattern of electrically conductive elements are/is formed by printed circuit elements.

Claim 17 (new): Device according to claim 4, wherein said first and/or said second pattern of electrically conductive elements are/is formed by printed circuit elements.

Claim 18 (new): Device according to claim 2, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

Claim 19 (new): Device according to claim 3, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

Claim 20 (new): Device according to claim 4, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

Claim 21 (new): Device according to claim 5, wherein the outer layer of the sheet or mat is further provided with a hollow and flexible, dome-shaped protrusion at each position of the pressure sensitive switches, each zone comprising a number of protrusions.

Claim 22 (new): Device according to claim 7, wherein said hollow and flexible protrusions are further provided with spring elements, preferably of metal, for obtaining a sufficient degree of elastic deformation when activated by said impact or pressure.

Claim 23 (new ) Device according to claim 7, wherein the shape of said protrusions is substantially circular as seen in plan view.

Claim 24 (new): Device according to claim 8, wherein the shape of said protrusions is substantially circular as seen in plan view.

Claim 25 (new ): Device according to claim 2, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 26 (new): Device according to claim 3, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 27 (new): Device according to claim 4, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 28 (new): Device according to claim 5, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 29 (new): Device according to claim 6, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 30 (new): Device according to claim 7, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 31 (new): Device according to claim 8, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.

Claim 32 (new): Device according to claim 9, wherein the surface of the sheet or mat is provided with at least one line corresponding to a line that is to be found on a standard field or court for the sport or game concerned, where at least some of the zones border said at least one line.